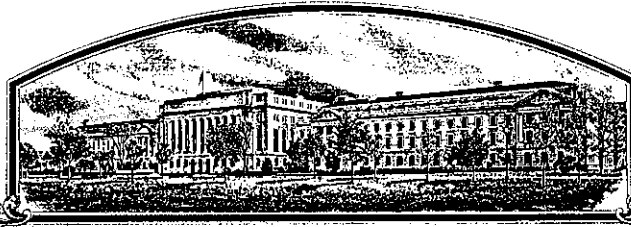


No.

9100005



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Thaddeus H. Busbire**

Whereas, THERE HAS BEEN PRESENTED TO THE  
**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

ALFALFA

'Cimarron VR'

In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington, D.C.  
this 30th day of April in  
the year of our Lord one thousand nine  
hundred and ninety-three.

Attest:

*Kenneth Evans*

Commissioner

Plant Variety Protection Office  
Agricultural Marketing Service

*Mike Egan*  
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) <b>Thaddeus H. Busbice</b>		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. <b>Cimarron VR</b>	3. VARIETY NAME <b>Cimarron VR</b>
4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) <b>3624 Kildaire Farm Road Apex, NC 27502</b>		5. PHONE (Include area code) <b>919-362-1583</b>	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER <b>9100005</b> FILING Date <b>Oct. 4, 1990</b> Time <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. FEES Filing and Examination Fee: <b>\$2150.-</b> Date <b>Oct. 4, 1990</b> Certificate Fee: <b>\$250.00</b> Date <b>Apr. 5, 1993</b>
6. GENUS AND SPECIES NAME <b>Medicago sativa</b>	7. FAMILY NAME (Botanical) <b>Leguminosae</b>		
8. CROP KIND NAME (Common Name) <b>Alfalfa</b>	9. DATE OF DETERMINATION <b>9-1-87</b>		
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			

PHONE (Include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

- a. ☒ Exhibit A, Origin and Breeding History of the Variety.
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety.
- d. ☒ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
- f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office **Oct 2, 1990**
- g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)  
☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?  
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?  
☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: \_\_\_\_\_.)  
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?  
☒ YES (If "YES," give names of countries and dates) **U.S. Sales beginning 1-3-90 continuing to present.**  
☐ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT [Owner(s)] <b>Thad H Busbice</b>	CAPACITY OR TITLE <b>Breeder</b>	DATE <b>9-21-90</b>
SIGNATURE OF APPLICANT [Owner(s)]	CAPACITY OR TITLE	DATE

**ALFALFA**  
**CimarronVR**

14. a. Exhibit A, Origin and Breeding History of **CimarronVR** alfalfa.

The germplasm of **CimarronVR** consists of 100% **Cimarron**. **CimarronVR** was bred in North Carolina by five generations of recurrent selection in the **Cimarron** variety for vigor, adaptation and resistance to Verticillium wilt and race 2 Anthracnose. Breeder seed was produced in 1987 on 3000 selected plants in a crossing block pollinated by bumble bees near Apex, NC. Breeder seed was the Syn 1 generation.

The variety is open pollinated and stable and no variants appear. We believe **CimarronVR** to be uniform in growth habit and appearance in relation to other alfalfa varieties on the market. Stability and uniformity have been observed over three generations.

## 14 B. Exhibit B, Novelty Statement

'Cimarron VR' is most similar to 'Cimarron'. 'Cimarron VR' differs from 'Cimarron' in resistance to Verticilium Wilt and race 2 Anthracnose. 'Cimarron VR' is significantly (.05 level of probability) more resistant than is 'Cimarron' to these diseases.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
LIVESTOCK AND SEED DIVISION  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MARYLAND 20705

EXHIBIT C  
(Alfalfa)

OBJECTIVE DESCRIPTION OF VARIETY  
ALFALFA (*Medicago sativa* sensu Gunn et al.)

NAME OF APPLICANT(S) Thaddeus H. Busbice	TEMPORARY DESIGNATION Cimarron VR	VARIETY NAME Cimarron VR
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 3624 Kildaire Farm Road Apex, NC 27502		FOR OFFICIAL USE ONLY PVPO NUMBER 9100005

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place numbers in the boxes to designate the expressions which are characteristic of the commercial generations of the application variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Include leading zeros when necessary (e.g., 0 8 9) for quantitative data. Comparative data should be determined from varieties entered in the same trial. Plant color may be precisely designated by using any recognized color chart, e.g., The Munsell Plant Tissue Color Charts.

## 1. WINTERHARDINESS:

6 CLASS:

- |                                              |                                      |
|----------------------------------------------|--------------------------------------|
| 1 = Very Non-Winterhardy (CUF 101)           | 2 = Non-Winterhardy (Moapa 69)       |
| 3 = Intermediately Non-Winterhardy (Mesilla) | 4 = Semi-Winterhardy (Lahontan)      |
| 5 = (Du Puits)                               | 6 = Moderately Winterhardy (Saranac) |
| 7 = (Ranger)                                 | 8 = Winterhardy (Vernal)             |
| 9 = Extremely Winterhardy (Norseman)         |                                      |

TEST LOCATION: Rock Springs, Pennsylvania

## 2. FALL DORMANCY:

## FALL DORMANCY (DETERMINED FROM SPACED PLANTINGS)

TESTING INSTITUTION AND LOCATION	DATE OF LAST CUT	DATE REGROWTH SCORED	REGROWTH SCORE OR AVERAGE HEIGHT				LSD .05
			APPLICATION VARIETY	CHECK VARIETIES*			
				DuPuits	Vernal	Cimarron	
Great Plains Research Co., Inc. 3624 Kildaire Fm Rd Apex, NC 27502	9-15-89	10-10-89	4.84	4.58	7.10	4.88	0.60

\* CUF 101, Moapa 69, Mesilla, Lahontan, Du Puits, Saranac, Ranger, Vernal, or Norseman as appropriate.

Specify scoring system used: 4=10", 5=8", 6=6"-8", 7=4"-6", 8=2"-4"

5 Fall Growth Habit (Determined from Fall Dormancy Trials)

- |                            |                          |                            |
|----------------------------|--------------------------|----------------------------|
| 1 = Erect (CUF 101)        | 3 = Semierect (Mesilla)  | 5 = Intermediate (Saranac) |
| 7 = Semidecumbent (Vernal) | 9 = Decumbent (Norseman) |                            |

## 3. RECOVERY AFTER FIRST SPRING CUT (In Southwest, first cut after March 21):

3

- |                          |                    |                           |                   |
|--------------------------|--------------------|---------------------------|-------------------|
| 1 = Very Fast (CUF 101)  | 3 = Fast (Saranac) | 5 = Intermediate (Ranger) | 7 = Slow (Vernal) |
| 9 = Very Slow (Norseman) |                    |                           |                   |

TEST LOCATION: Apex, NC

## 4. AREAS OF ADAPTATION IN U.S. (Where tested and proven adapted):

2 Primary Area of Adaptation

7 3 Other Areas of Adaptation

- |                                          |                               |                  |               |
|------------------------------------------|-------------------------------|------------------|---------------|
| 1 = North Central                        | 2 = East Central              | 3 = Southeast    | 4 = Southwest |
| 5 = Moderately Winterhardy Intermountain | 6 = Winterhardy Intermountain | 7 = Great Plains |               |
| 8 = Other (Specify) _____                |                               |                  |               |



## 5. FLOWERING DATE (When 10% of plants possess open flowers at time of first spring cut):

<input type="text"/> Days Earlier Than	<input type="text"/>	1 = CUF 101	2 = Mesilla	3 = Saranac	4 = Vernal	5 = Norseman
Same As	3					
<input type="text"/> Days Later Than	<input type="text"/>					

TEST LOCATION: Apex, NC

## 6. PLANT COLOR (Determined from healthy regrowth 3 weeks after first spring cut, controlling leafhoppers if necessary):

☒ 1 = Very Dark Green (524)      2 = Dark Green (Vernal)      3 = Light Green (Ranger)

COLOR CHART VALUE (Specify chart used; Munsell Color Charts for Plant Tissues):

APPLICATION VARIETY: 7.5GY 4/4

VERNAL: 7.5GY 4/4

TEST LOCATION: Apex, NC

## 7. CROWN TYPE (Determined from spaced plantings):

☒ Noncreeping Types:      1 = Broad (Vernal)      2 = Intermediate (Saranac)      3 = Narrow (CUF 101)

Creeping Types:      4 = Creeping Rooted (Rangelander)      5 = Rhizomatous (Rhizoma)

## 8. FLOWER COLOR (Determine frequency of plants for each color class as defined by USDA Agricultural Handbook No. 424 (Barnes 1972), allowing all plants in plot to flower):

☐ ☐ ☐ % Purple and Violet (Subclasses 1.1 to 1.4)

☐ ☐ ☐ % Blue (Subclasses 2.3 and 2.4)

☐ ☐ ☐ % Variegated Other Than Blue (Subclasses 2.1, 2.2, 2.5 to 2.9)

☐ ☐ ☐ % Yellow (Subclasses 4.1 to 4.4)

☐ ☐ ☐ % Cream (Class 3) Trace

☐ ☐ ☐ % White (Class 5)

TEST LOCATION: Apex, NC

## 9. POD SHAPE (Determine frequency of plants with the following pod shapes produced on well cross-pollinated racemes):

☐ ☐ ☐ % Tightly Coiled (One or more coils, center more or less closed)

☐ ☐ ☐ % Loosely Coiled (One or more coils, center conspicuously open)

☐ ☐ ☐ % Sickle (Less than 1 coil)

TEST LOCATION: Apex, NC

10. PEST RESISTANCE: Provide in the appropriate column, trial data for application variety, and resistant (R) and susceptible (S) check varieties, synthetic generation tested, average severity index scores (ASI), least significant difference statistics (LSD .05), the institution in charge of test, year, and location of test, and whether test is a field or laboratory evaluation. Describe scoring system, and any test procedure which differs from standard methods proposed by Elgin (1982). Trial data from other test years or locations should be presented whenever available on a separate document as Exhibit D. Seeds of the check varieties and germplasm lines listed below can be obtained from the USDA Field Crops Laboratory, Bldg. 001, Rm. 335, BARC-West, Beltsville, MD 20705. Although comparisons with check varieties listed below are preferred, comparisons with any appropriate check variety recommended by Elgin (1982) may be presented.

A. DISEASE RESISTANCE:	DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Anthracnose, Race 1 ( <i>Colletotrichum trifolii</i> )	Application		1	53	120	.528	.148	Great Plains Research Co., Inc. 1988 Apex, NC Laboratory
	Are (R) Saranac AR (R)		63	120	.631			
	Saranac (S)		0	120	0			
	SCORING SYSTEM: Scored 0 or 1, 0 = dead and 1 = live							
Anthracnose, Race 2 ( <i>Colletotrichum trifolii</i> )	Application		3	25	120	.250	.143	Great Plains Research Co., Inc. 1989 Apex, NC Laboratory
	Saranac AR (R)		47	120	.467			
	Are (S) Saranac (S)		0	120	0			
	SCORING SYSTEM: Scored 0 or 1, 0 = dead and 1 = live							
Bacterial Wilt ( <i>Corynebacterium insidiosum</i> )	Application		2	68	150	1.60	0.53	University of Minnesota 1989 St. Paul, MN Field
	Vernal (R)		56	150	1.78			
	Narragansett (S)		7	105	3.60			
	SCORING SYSTEM: Scored 0 to 5, 0 and 1 classified resistant							
Common Leafspot ( <i>Pseudopeziza medicaginis</i> )	Application							
	MSA-CW3AN3 (R)							
	Ranger (S)							
	SCORING SYSTEM:							

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## 10. A. PEST RESISTANCE (Continued):

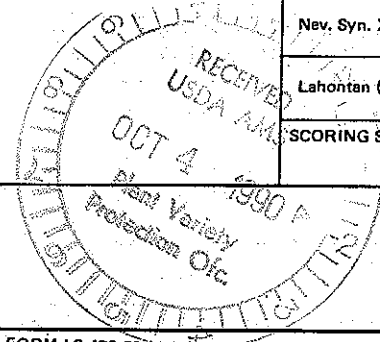
DISEASE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Downy Mildew ( <i>Peronospora trifoliorum</i> )	Application						
Isolate, if known:	Saranac (R)						
	Kanza (S)						
SCORING SYSTEM:							
Fusarium Wilt ( <i>Fusarium oxysporum</i> f. <i>medicaginis</i> )	Application	2	67	150	1.74		
	Moapa 69 (R)		83	150	1.43	0.61	University of Minnesota 1989 St. Paul, MN Field
	Narragansett (S)		26	150	3.50		
SCORING SYSTEM: Scored 0 to 5, classes 0 and 1 considered resistant							
Phytophthora Root Rot ( <i>Phytophthora megasperma</i> f. <i>medicaginis</i> )	Application	3	43	160	3.5		
	Agate (R)		43	160	3.4	0.27	Crop Characteristic Inc. 1990 Northfield, MN Laboratory
	Saranac (S)		0	160	4.1		
SCORING SYSTEM: Scored 1 to 6, classes 1 and 2 considered resistant							
Verticillium Wilt ( <i>Verticillium albo-atrum</i> )	Application	3	30	144	2.9		
	Vertus (R)		40	144	2.8	0.33	Crop Characteristic Inc. 1990 Northfield, MN Laboratory
	Saranac (S)		4	144	4.2		
SCORING SYSTEM: Scored 1 to 5, classes 1 and 2 considered resistant							
Other (Specify) Aphanomyces	Application	3	41	152	2.7		
Root Rot	(R) WAPH 1		77	154	1.8	0.29	Crop Characteristic Inc. 1989 Northfield, MN Laboratory
(Aphanomyces euteiches)	(S) Agate		7	145	3.5		
SCORING SYSTEM: Scored 1 to 5, classes 1 and 2 considered resistant							
Other (Specify)	Application						
	(R)						
	(S)						
SCORING SYSTEM:							
B. INSECT RESISTANCE:	VARIETY	SYN. GEN. TESTED	PERCENT DEFOLIATION	DEFOLIATION IN PERCENT OF RESISTANT CHECK	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Alfalfa Weevil ( <i>Hypera postica</i> )	Application	1	40	83	40		
	Are (R) Cimarron (R)		48	100	48	11.9	Great Plains Research Co., Inc. 1988
	Saranac (S) Trumpetor (S)		73	152	73		Apex, NC Field
SCORING SYSTEM: Visual estimate of amount of defoliation							

## 10. B. INSECT RESISTANCE (Continued):

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT SEEDLING SURVIVAL	NUMBER OF SEEDLINGS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Blue Alfalfa Aphid ( <i>Acyrtosiphon kondoi</i> )	Application	1	7	260	5.05	0.19	Oklahoma State Univ 1988 Stillwater, OK Laboratory
	CUF 101 (R)		37	260	5.01		
	PA-1 (S)		10	260	4.42		
	SCORING SYSTEM: Scored 1 to 6, classes 1,2,3 and 4 considered resistant						
Pea Aphid ( <i>Acyrtosiphon pisum</i> )	Application	1	>99	200	3.6	0.42	Crop Characteristic Inc. 1990 Northfield, MN Laboratory
	Kanza (R)		55	200	4.4		
	Ranger (S)		17	200	4.8		
	SCORING SYSTEM: Scored 0 or 1, 0 = dead and 1 = live, adjusted						
Spotted Alfalfa Aphid ( <i>Therioaphis maculata</i> )  Biotype, if known:	Application	3	46	285	0.46	0.11	Oklahoma State Univ 1990 Stillwater, OK Laboratory
	Kanza (R)		70	218	0.70		
	Ranger (S) Team (S)		1	240	0.01		
	SCORING SYSTEM: Scored 0 or 1, 0 = dead and 1 = live						

INSECT	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Potato Leafhopper Yellowing ( <i>Empoasca fabae</i> )	Application						
	MSA-CW3An3 (R)						
	Ranger (S)						
	SCORING SYSTEM:						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

C. NEMATODE RESISTANCE:							
NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Northern Root Knot ( <i>Meloidogyne hapla</i> )	Application						
	Nev. Syn. XX (R)						
	Lahontan (S)						
	SCORING SYSTEM:						



## 10. C. NEMATODE RESISTANCE (Continued):

NEMATODE	VARIETY	SYN. GEN. TESTED	PERCENT RESISTANT PLANTS	NUMBER OF PLANTS TESTED	ASI	ASI LSD .05	INSTITUTION, YEAR, LOCATION, FIELD OR LABORATORY
Southern Root Knot ( <i>Meloidogyne incognita</i> )	Application						
	Moapa 69 (R)						
	Lahontan (S)						
	SCORING SYSTEM:						
Stem Nematode ( <i>Ditylenchus dipsaci</i> )	Application	3	37	130	3.3	0.49	Crop Characteristi 1990 Northfield, MN Laboratory
	Lahontan (R)		52	130	2.6		
	Ranger (S)		9	130	4.0		
	SCORING SYSTEM: Scored 1 to 5, 1 and 2 classified resistant						
Other (Specify)	Application						
	(R)						
	(S)						
	SCORING SYSTEM:						

## 11. INDICATE THE VARIETY THAT MOST CLOSELY RESEMBLES THE APPLICATION VARIETY FOR EACH OF THE FOLLOWING CHARACTERS:

CHARACTER	VARIETY	CHARACTER	VARIETY
Winterhardiness	Cimarron	Plant Color	Cimarron
Recovery After 1st Cut	Cimarron	Crown Type	Cimarron
Area of Adaptation	Cimarron	Combined Disease Resistance	Cimarron
Flowering Date	Cimarron	Combined Insect Resistance	Cimarron

## REFERENCES

Barnes, D.K. 1972. A System for Visually Classifying Alfalfa Flower Color. U.S. Dep. Agric. Handb. 424. 18 pp. (Note: Greenish cast of plate 6, A and B is an artifact of printing, actual colors a blend of yellow and white.)

Elgin, J.H., Jr., (ed.). 1982. Standard Tests to Characterize Pest Resistance in Alfalfa Cultivars. U.S. Dep. Agric. Tech. Bull. (In Press).

Gunn, C.R., W.H. Skrdla, and H.C. Spencer. 1978. Classification of *Medicago sativa* L. using legume characters and flower colors. U.S. Dep. Agric. Tech. Bull. 1574. 84 pp.

Munsell Color Co. 1977. Munsell Plant Tissue Color Charts. Munsell Color Co., Inc. Baltimore.

NOTE: Any additional descriptive information and supporting documentation may be provided as Exhibit D.

14 D. Exhibit D, Additional Description of Variety. Evaluations of disease and insect resistance.

Race 1. Anthracnose

Conducted December 30, 1987 in laboratory by Great Plains Research Company, Inc.

<u>Entry</u>	<u>% Resistant Plants</u>
Cimarron	34
Cimarron VR	49
Shenandoah	55
Saranac AR	48
Saranac	0
Oneida VR	12
Apollo II	9
WL 316	46
LSD.05	20

Race 2. Anthracnose

Conducted March 1, 1988 in laboratory by Great Plains Research Company Inc.

<u>Entry</u>	<u>% Resistant Plants</u>
Cimarron	10
Cimarron VR	33
Saranac AR	36
Saranac	0
LSD .05	16

Verticillium Wilt

Conducted in 1989 in laboratory at Madison, WI by the University of Wisconsin.

<u>Entry</u>	<u>% Resistant Plants</u>
Cimarron VR	24
Saranac	2
Vertus	33
Oneida VR	20
LSD.05	18

## 14 D. Continued

## Verticillium Wilt

Conducted May 29, 1989 in laboratory near Apex, NC by Great Plains Research Company, Inc.

<u>Entry</u>	<u>% Resistant Plants</u>	<u>ASI</u>
Oneida VR	50	2.77
Cimarron	8	4.37
Vernal	0	4.98
Cimarron VR	42	3.27
Saranac	2	4.77
LSD.05	17	0.55

## Aphanomyces Root Rot

Conducted November 21, 1989 in laboratory near Apex, NC by Great Plains Research Company, Inc.

<u>Entry</u>	<u>% Resistant Plants</u>	<u>ASI</u>
Agate	3	3.60
WAPH-1	50	2.62
Cimarron VR	38	2.55
LSD.05	21	0.57

## Aphanomyces Root Rot

Conducted November 10, 1989 in laboratory in Madison, WI by University of Wisconsin.

<u>Entry</u>	<u>% Resistant Plants</u>
Phantom	8
Magnum III	10
Cimarron VR	25
Saranac	4
WAPH 1	56
Fortress	7
Agate	8
Apollo II	6
LSD.05	9

## Spotted Alfalfa Aphid

Conducted February 1988 in laboratory in Stillwater, OK by Oklahoma State University.

<u>Entry</u>	<u>% Resistant Plants</u>
Cimarron VR	29
Caliverde	0
Kanza	25
LSD.05	7

## 14 D. Continued

## Spotted Alfalfa Aphid

Conducted January 9, 1988 in laboratory near Apex, NC by Great Plains Research Company, Inc.

<u>Entry</u>	<u>% Resistant Plants</u>
Oneida VR	8
Cimarron VR	39
Cimarron	17
Trumpetor	7
Vernema	24
WL 316	16
Apollo II	25
Cuf 101	55
Kanza	16
Vernal	1
Ranger	2
LSD.05	14

14 E. Statement of the Basis of Applicant's Ownership.

The variety for which Plant Variety Protection is hereby sought was developed by Dr. Thaddeus Hillery Busbice, the applicant. Dr. Busbice is employed by Great Plains Research Company, Inc. as President of the Company. By agreement between the employee and Great Plains Research Company, Inc. all rights to any invention, discovery, or development made by the employee while employed by Great Plains Research Company, Inc. is the sole property of the employee.